

REMARKS

Claims 1-16 are pending in this application and no claims have been allowed. The applicants appreciatively acknowledge the Examiner's indication of allowable subject matter, specifically claims 2, 3 and 9-16, if rewritten as proposed.

Claim 1, as amended, recites in part, "one of the first and second outlet ports of the first directional control valve being in communication with the supply inlet port of the second directional control valve such that a regenerative flow is established between the first fluid cylinder and the supply inlet port of the second directional control valve in response to fluid communication being established between the supply inlet port of the first directional control valve and the one of the first and second outlet ports of the first directional control valve."

In response to the rejection of Claims 1-16 as being indefinite pursuant to 35 USC 112, second paragraph, Claim 1 has been amended to more clearly define the invention. Since Claims 2-16 depend, directly or indirectly, from Claim 1, they too are not indefinite.

Claim 1 is rejected as being anticipated by U.S. Patent 4,200,118 issued to Budzich.

Budzich discloses a load responsive control valve having a pair of control valve assemblies 12 and 13 controlling actuators 14 and 15 subjected to loads W_1 and W_2 (col. 1, lines 63-68). Each of the valve assemblies 12, 13 include partitioned housing portions 22, 23, 27 and 28 co-acting with lands on the valve spool 34 to provide sequential communication between the valve assemblies 12, 13, the pump 10 and the loaded actuating chambers 56 of the actuators 14, 15. Specifically, movement of the valve spool 34 opens the load sensing port 47 or 48 to the transfer chamber 22 or 23, while the land 37 still isolates the inlet chamber 21 from transfer chambers 22 and 23. Still further displacement of the valve spool 34 connects the inlet chamber 21 with transfer chambers 22 and 23 while simultaneously connecting one of the load chambers 25 or 26 to one of the exhaust chambers 27 or 28 (Fig. 1 and col. 3, lines 10-28). Further, the valve spool 34 of the flow control valve 12 must be positioned in a neutral position and the valve spool 34 of the flow control valve 13 must be moved upward all the way as shown in the drawing to provide the flow control valve 13 in a regenerative position (Col. 3, lines 39-43).

In sharp contrast, amended claim 1 of the present invention provides communication between one of the first and second outlet ports and the supply inlet port of the second directional control valve such that a regenerative flow is established between the first fluid cylinder and the supply inlet port of the second directional control valve in response to fluid communication being established between the supply inlet port of the first directional control valve and the one of the first and second outlet ports of the first directional control valve. The purpose of such an arrangement is that regenerative flow is immediately offered through movement of the directional control valve arrangement. Additionally, in so doing, such a reactive arrangement prevents the first and second fluid cylinders from being substantially slowed or stalled when both cylinders are simultaneously urged to move since the lightly loaded cylinder is subjected to substantially the same level of pressure that is being generated by the heavier loaded fluid cylinder. (see page 18, lines 25-30 through page 19, lines 1-7 of the application as originally filed).

Budzich neither discloses nor suggest such a structure. Rather, the disclosure of Budzich provides that the valve arrangement 12 must be in the neutral position and the valve arrangement 13 must be in a fully extended position to cause a regenerative flow.

Claims 4-8 are rejected under 35 USC 103 as being unpatentable over Budzich in view of U.S. Patent No. 4,204,459 issued to Johnson.

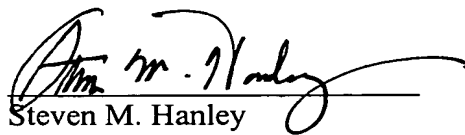
Johnson discloses a hydraulic system using a single valve for the dual function of providing a check valve type action and a flow control. Similar to Budzich, Johnson discloses a valve spool arranged within a housing to provide discrete circuit functions dependent on displaced spool position. The applicants respectfully assert that neither Johnson nor Budzich, individually or in combination, disclose or suggest amended claim 1. Since claims 4-8 are dependent, either directly or indirectly, from claim 1, then they too are neither anticipated nor rendered obvious by Budzich and Johnson.

For all of the same reasons that Claims 1 and 4-8 distinguish over the prior art of record, Claims 2-3 and 9-16, which are dependant, directly or indirectly from Claim 1, distinguish over the prior art of record.

It is believed that Claims 1-16 now define the inventive subject matter with a scope that is neither anticipated nor rendered obvious by the prior art of record and allowance

of the application is earnestly solicited. The Examiner is invited to telephone the undersigned if such would be of assistance in expediting prosecution of the application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven M. Hanley", written over a horizontal line.

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ATTACHMENT
(Changes made to claims)

Title: HYDRAULIC CIRCUIT HAVING PRESSURE EQUALIZATION DURING
REGNERATION

Application No. 09/464,497

Attorney Docket No. 99-120.4

Please amend the claims as follows:

1. (Thrice Amended) A fluid system having a single source of pressurized supply fluid that receives fluid from a reservoir and being operable to control multiple loads, the fluid system comprising:

a first fluid circuit connected to the single source of pressurized supply fluid and having a first directional control valve connected to a first fluid cylinder having head end and rod end ports, the first directional control valve having a supply inlet port connected to the single source of pressurized fluid, first and second outlet ports connected to the respective head end and rod end ports of the first fluid cylinder, and an exhaust port connected to the reservoir; the first directional control valve being movable between a center position and first and second operable positions; in the center position, the supply port, the first and second outlet ports and the exhaust port are blocked from one another; in the first operable position, the supply port is in communication with the second outlet port and the first outlet port is in communication with the exhaust port; and in the second operable position the supply port is in communication with the first outlet port and the second outlet port is in communication with the supply port; and

a second fluid circuit connected to the single source of pressurized supply fluid in parallel with the first fluid circuit and having a second directional control valve connected to a second fluid cylinder having head end and rod end ports, the second directional control valve having a supply inlet port connected to the single source of pressurized fluid, first and second outlet ports connected to respective head end and rod end ports of the second fluid cylinder, and an exhaust port connected to the reservoir; the second directional control valve being movable between a center position and first and second operable positions; in the center position the supply port is blocked from the first and second

outlet ports and the head end and rod end ports are blocked from the exhaust port; in the first operable position the supply port is in communication with the second outlet port and the first outlet port is in communication with the exhaust port; and in the second operable position the supply port is in communication with the first outlet port and the second outlet port is in communication with the exhaust port; [and]

wherein [a pressure condition of] one of the first and second outlet ports of the first directional control valve being in communication with the supply inlet port of the second directional control valve such that a regenerative flow is established between the first fluid cylinder and the supply inlet port of the second directional control valve in response to fluid communication being established between the supply inlet port of the first directional control valve and the one of the first and second outlet ports of the first directional control valve.